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Young investigator research program receives $6.3 million in grants

by William J. Sharp, Air Force Office of Scientific Research

ARLINGTON, Va. — The Air Force Office of Scientific Research announced October 2 it will award approximately $6.3 million in grants to 21 scientists and engineers who submitted winning research proposals through the Air Force's new Young Investigator Research Program (YIP).

The program is open to scientists and engineers at research institutions across the United States. Those selected will receive the grants over a three-year period. A total of 145 proposals were received in response to the AFOSR broad agency solicitation in major areas of interests to the Air Force. Interest areas include physics, electronics, mathematics and aerospace, materials, chemistry, information and life sciences.

"AFOSR is proud to participate in the President's National Competitive Initiative by supporting the exciting research of these 21 outstanding scientists and engineers," said Dr. Brendan B. Godfrey, AFOSR director. "The AFOSR Young Investigator Research Program's plans to award at least 50 grants over the next three years," he added.

The program supports scientists and engineers who have received doctorate or equivalent degrees in the last five years. Grant recipients must show exceptional ability and promise for conducting basic research. The objectives of this program include fostering creative basic research in science and engineering, enhancing early career development of outstanding young investigators, and increasing opportunities for the young investigators to recognize the Air Force's mission and challenges in science and engineering.

The recipients and their anticipated research areas are:

Dr. Natalie A. Cartwright, University of Vermont State and Agricultural College in Burlington, Vt., will investigate ultrawideband electromagnetic pulse propagation through the ionosphere.

Dr. Mainak Chatterjee, University of Central Florida in Orlando, Fla., will focus on economic models for end-to-end decision making in an ad hoc network environment.

Dr. Kenneth T. Christensen, University of Illinois at Urbana-Champaign, Ill., will look at low-order models of highly-irregular surface roughness and their impact on wall turbulence.

Dr. Andrew Christlieb, Michigan State University in East Lansing, Mich., will examine grid free electromagnetic plasma simulations.

Dr. Scott A. Craver, State University of New York in Binghamton, N.Y., will work on identification of secret algorithms using oracle attacks.

Dr. Jason Heikenfeld, University of Cincinnati, Ohio, will explore fundamental understanding of materials and operational issues for electrowetting optics in extreme environment and high-accuracy Air Force applications.

Dr. Christine Julien, University of Texas at Austin, Texas, will explore adaptive coordination for dynamic mobile systems.

Dr. Giti A.Khodaparast, Virginia Polytechnic Institute and State University in Blacksburg, Va., will research probing and manipulation of coherent states in ferromagnetic narrow gap semiconductors with an eye towards developing concepts for new device functionalities.

Dr. Pongpan Laksanalamai, University of Maryland Biotechnology Institute in Baltimore, Md., will study influence of temperature on the dynamic structures of psychrophilic small heat shock proteins.

Dr. Jian Luo, Clemson University in Clemson, S.C., will examine nanoscale quasi-liquid grain boundary films in refractory metals.

Dr. Benjamin J. McCall, University of Illinois at Urbana-Champaign, Ill., will focus on ultrasensitive infrared spectroscopy of molecular ions of importance in atmospheric chemistry and propulsion.

Dr. Jin Kim Montclare, Polytechnic University in Brooklyn, N.Y., will examine engineered protein polymers.

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Dr. Matthew A. Oehlschlaeger, Rensselaer Polytechnic Institute in Troy, N.Y., will focus on an experimental study of the oxidation, ignition, and soot formation characteristics of jet fuel.

Dr. Anatoli Polkovnikov, Boston University in Boston, Mass., will research dynamics and thermodynamics of many-particle cold atom systems.

Dr. Clarence W. Rowley, Princeton University in Princeton, N.J., will study unsteady aerodynamic models for flight control of agile micro air vehicles.

Dr. Christian Shelton, University of California at Riverside, Calif., will explore continuous time structured stochastic processes.

Dr. Izabela Szlufarska, University of Wisconsin at Madison, Wis., will study the tribology of nanostructured silicon carbide for MEMS and NEMS applications in extreme environments.

Dr. Mitchell Walker, Georgia Tech Research Corporation in Atlanta, Ga., will focus on annular helicon plasma sources for high thrust-to-power hall thrusters.

Dr. Clark Taylor, Brigham Young University in Provo, Utah, will explore vision-assisted navigation of miniature unmanned aerial vehicles.

Dr. Haiyan Wang, Texas Engineering Experiment Station in College Station, Texas, will study nanoengineered YBCO coated conductors for flux pinning enhancements.

Dr. Hao Yan, Arizona State University in Tempe, Ariz., will research self-assembled combinatorial nanoarrays for multiplex biosensing. @